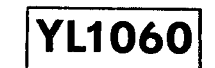
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DOUBLE TETRODE for use as R.F. amplifier, oscillator, frequency multiplier and modulator. The tube is internally neutralized.

CATHODE: oxide coated

HEATING: indirect by A.C. or D.C.

Heater voltage	V_f =	6.3 V	12.6 V
Heater current	I_f =	1.8 A	0.9 A
Pins		5-(1+7)	1-7

CAPACITANCES (each system, the elements of the other system being earthed)

Anode to all other elements except grid No.1	C_a	= 3.2 pF
Grid No.1 to all other elements except anode	C_{g_1}	= 10.5 pF
Anode to grid No.1	C_{ag_1}	$<$ 0.09 pF

For internal neutralization (C_n, C_n') please refer to electrode connections page 2.

TYPICAL CHARACTERISTICS (each system)

Anode current	I_a	= 30 mA
Mutual conductance	S	= 4.5 mA/V
Amplification factor of grid No.1 with respect to grid No.2	$\mu_{g_2g_1}$	= 8.2

Freq. (Mc/s)	C telegr.				Cag_2 mod.			
	C.C.S.		I.C.A.S.		C.C.S.		I.C.A.S.	
	V_a (V)	W_ℓ [1] (W)	V_a (V)	W_ℓ [1] (W)	V_a (V)	W_ℓ [1] (W)	V_a (V)	W_ℓ [1] (W)
175	900	132	1000	163	750	85	800	107

[1]) Useful power in the load

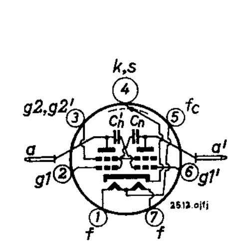
COOLING: radiation

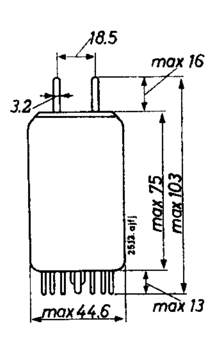
When the tube is used near its limiting values it may be necessary to direct an air flow on the bulb and the anode seals. In general an air flow of approximately 0.56 m^3/min. will be sufficient.

TEMPERATURE LIMITS (Absolute limits)

Temperature of bulb and anode seals	= max. 250 °C
Temperature of base pin seals	= max. 180 °C

Dimensions in mm





Base	Septar
Socket	40202
Anode connector clips	40681

Mounting position: Vertical with base up or down or horizontal with the anode pins in a horizontal plane

Net weight 71 g

H.F. class C telegraphy, two systems in push-pull

LIMITING VALUES (continuous service; absolute limits)

			C.C.S.
Frequency	f	up to	175 Mc/s
Anode voltage	V_a	= max.	1000 V
Anode current	I_a	= max.	2x110 mA
Anode dissipation	W_a	= max.	2x30 W
Anode input power	W_{ia}	= max.	2x100 W
Grids No.2 voltage	$V_{g_2,g_2'}$	= max.	300 V
Grids No.2 dissipation	$W_{g_2,g_2'}$	= max.	7 W
Negative grid No.1 voltage	$-V_{g_1}$	= max.	175 V
Grid No.1 current	I_{g_1}	= max.	2x5 mA
Grid No.1 circuit resistance	R_{g_1}	= max.	50 kΩ[1]
Heater to cathode voltage	V_{kf}	= max.	100 V

OPERATING CONDITIONS (continuous service)

		C.C.S.		
Frequency	f	= 175	175	Mc/s
Anode voltage	V_a	= 1000	900	V
Grids No.2 voltage	$V_{g_2,g_2'}$	= 230	245	V
Grid No.1 voltage	V_{g_1}	= -85	-90	V
Common grids No.1 resistor	$R_{g_1,g_1'}$	= 15	15	kΩ
Anode current	I_a	= 2x100	2x110	mA
Grids No.2 current	$I_{g_2,g_2'}$	= 11.2	12.5	mA
Grids No.1 current	$I_{g_1,g_1'}$	= 5.7	5.9	mA
Anode input power	W_{ia}	= 200	198	W
Anode dissipation	W_a	= 2x27	2x25	W
Grids No.2 dissipation	$W_{g_2,g_2'}$	= 2.5	3.0	W
Driver output power	W_{dr}	= 3.5	3.5	W
Output power	W_o	= 146	150	W
Efficiency	η	= 73	75	%
Useful power in the load	W_ℓ	= 125	132	W

[1]) Each section

H.F. class C telegraphy, two systems in push-pull (continued)

LIMITING VALUES (Intermittent service; absolute limits)

			I.C.A.S.
Frequency	f	up to	175 Mc/s
Anode voltage	V_a	= max.	1000 V
Anode current	I_a	= max.	2x120 mA
Anode dissipation	W_a	= max.	2x34 W
Anode input power	W_{ia}	= max.	2x120 W
Grids No.2 voltage	$V_{g_2,g_2'}$	= max.	300 V
Grids No.2 dissipation	$W_{g_2,g_2'}$	= max.	8 W
Negative grid No.1 voltage	$-V_{g_1}$	= max.	175 V
Grid No.1 current	I_{g_1}	= max.	2x5 mA
Grid No.1 circuit resistance	R_{g_1}	= max.	50 kΩ[1])
Heater to cathode voltage	V_{kf}	= max.	100 V

OPERATING CONDITIONS (Intermittent service)

		I.C.A.S.		
Frequency	f =	175	175	Mc/s
Anode voltage	V_a =	1000	900	V
Grids No.2 voltage	$V_{g_2,g_2'}$ =	260	260	V
Grid No.1 voltage	V_{g_1} =	-85	-85	V
Common grids No.1 resistor	$R_{g_1,g_1'}$ =	15	15	kΩ
Anode current	I_a =	2x120	2x120	mA
Grids No.2 current	$I_{g_2,g_2'}$ =	16.5	17.0	mA
Grids No.1 current	$I_{g_1,g_1'}$ =	5.7	5.7	mA
Anode input power	W_{ia} =	240	216	W
Anode dissipation	W_a =	2x30	2x25	W
Grids No.2 dissipation	$W_{g_2,g_2'}$ =	4.3	4.5	W
Driver output power	W_{dr} =	3.5	3.5	W
Output power	W_o =	180	166	W
Efficiency	η =	75	77	%
Useful power in the load	W_ℓ =	163	147	W

[1]) Each section

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H.F. class C anode and screen grid modulation, two systems in push-pull

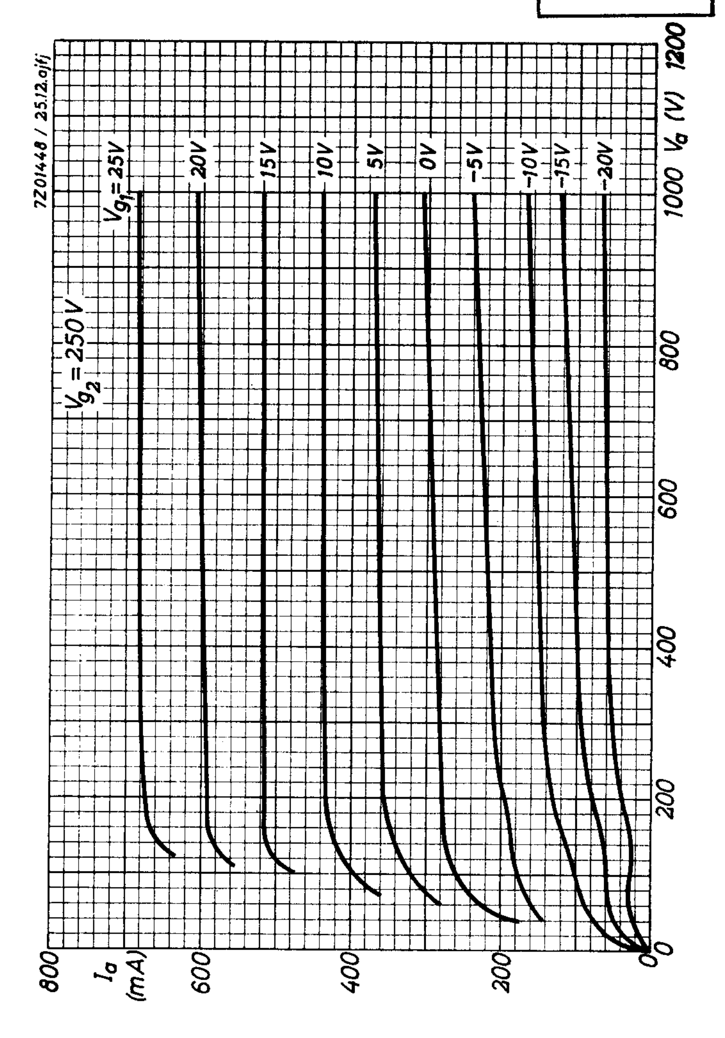
LIMITING VALUES (Absolute limits)

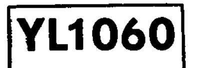
			C.C.S.	I.C.A.S.	
Frequency	f		up to 175	175	Mc/s
Anode voltage	V_a	= max.	800	800	V
Anode current	I_a	= max.	2x90	2x100	mA
Anode dissipation	W_a	= max.	2x21	2x23.5	W
Anode input power	W_{ia}	= max.	140	160	W
Grids No.2 voltage	$V_{g2,g2'}$	= max.	250	250	V
Grids No.2 dissipation	$W_{g2,g2'}$	= max.	5.0	5.5	W
Negative grid No.1 voltage	$-V_{g1}$	= max.	175	175	V
Grid No.1 current	I_{g1}	= max.	2x5	2x5	mA
Grid No.1 circuit resistance	R_{g1}	= max.	50	50	kΩ [1])
Heater to cathode voltage	V_{kf}	= max.	100	100	V

OPERATING CONDITIONS

			C.C.S.	I.C.A.S.	
Frequency	f	=	175	175	Mc/s
Anode voltage	V_a	=	750	800	V
Grids No.2 voltage	$V_{g2,g2'}$	=	250	225	V
Grid No.1 voltage	V_{g1}	=	-66	-75	V
Common grids No.1 resistor	$R_{g1,g1'}$	=	15	15	kΩ
Anode current	I_a	=	2x90	2x100	mA
Grids No.2 current	$I_{g2,g2'}$	=	10.2	8.8	mA
Grids No.1 current	$I_{g1,g1'}$	=	4.4	5.0	mA
Anode input power	W_{ia}	=	135	160	W
Anode dissipation	W_a	=	2x19	2x21	W
Grids No.2 dissipation	$W_{g2,g2'}$	=	2.6	2.0	W
Driver output power	W_{dr}	=	3.4	3.0	W
Output power	W_o	=	97	122	W
Efficiency	η	=	72	74	%
Useful power in the load	W_ℓ	=	85	107	W
Modulation depth	m	=	100	100	%
Peak grids No.2 modulation voltage	$V_{g2,g2'p}$	=	90	80	V
Modulation power	W_{mod}	=	68	80	W

[1]) Each section


7201448 / 25.12.ajfj
V_{g_2} = 250 V
V_{g_1} = 25V
20V
15V
10V
5V
0V
−5V
−10V
−15V
−20V
V_a (V)
0
200
400
600
800
1000
1200
I_a (mA)
800
600
400
200
0



PHILIPS

7Z01449 / 25.12.ajfj

V_{g_2} = 250V

V_{g_1} = 25V

20V

15V

10V

0V

-10V

-20V

I_{g_2} (mA)

600

400

200

0

V_a (V)

0

200

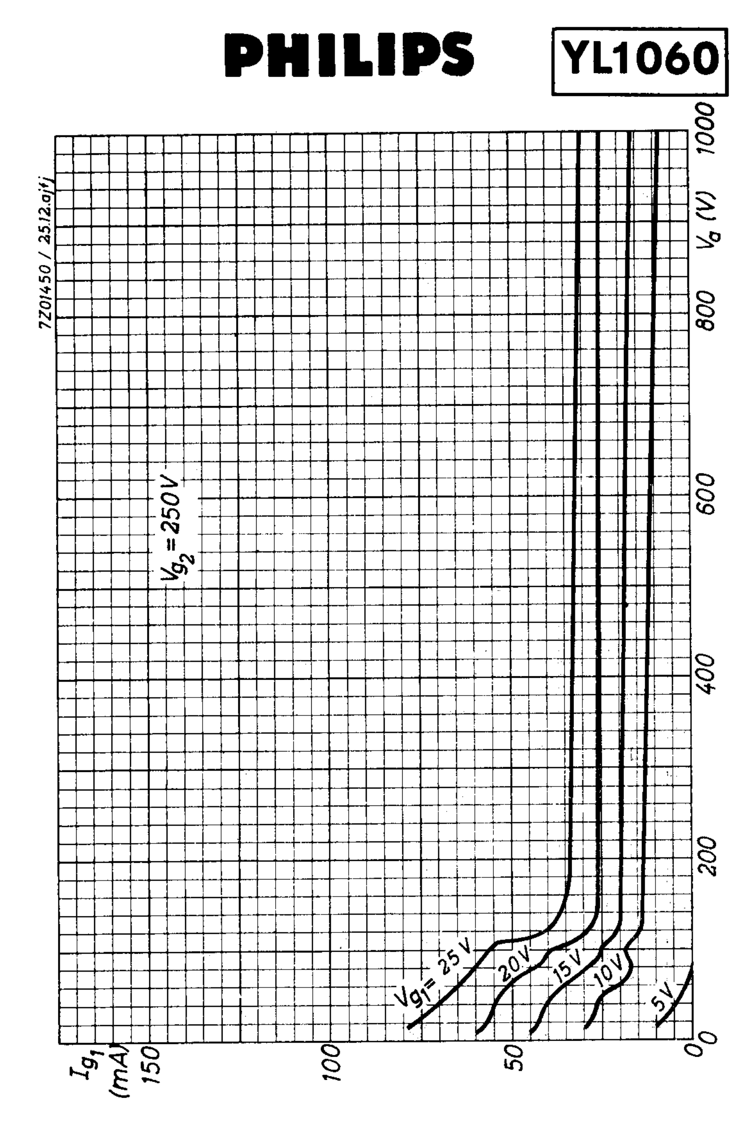
400

600

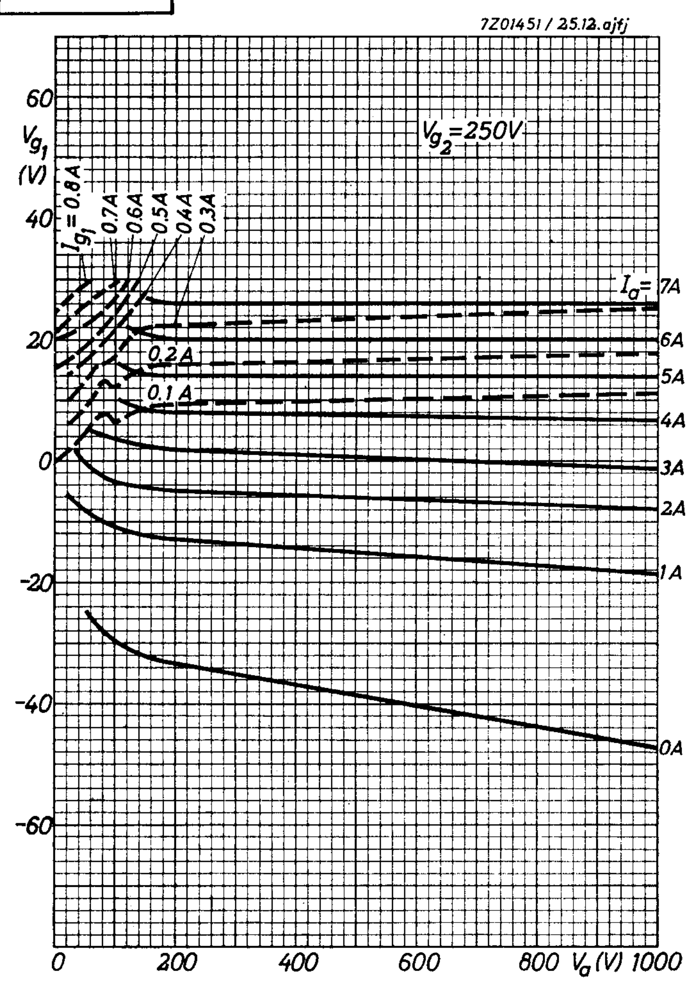
800

1000

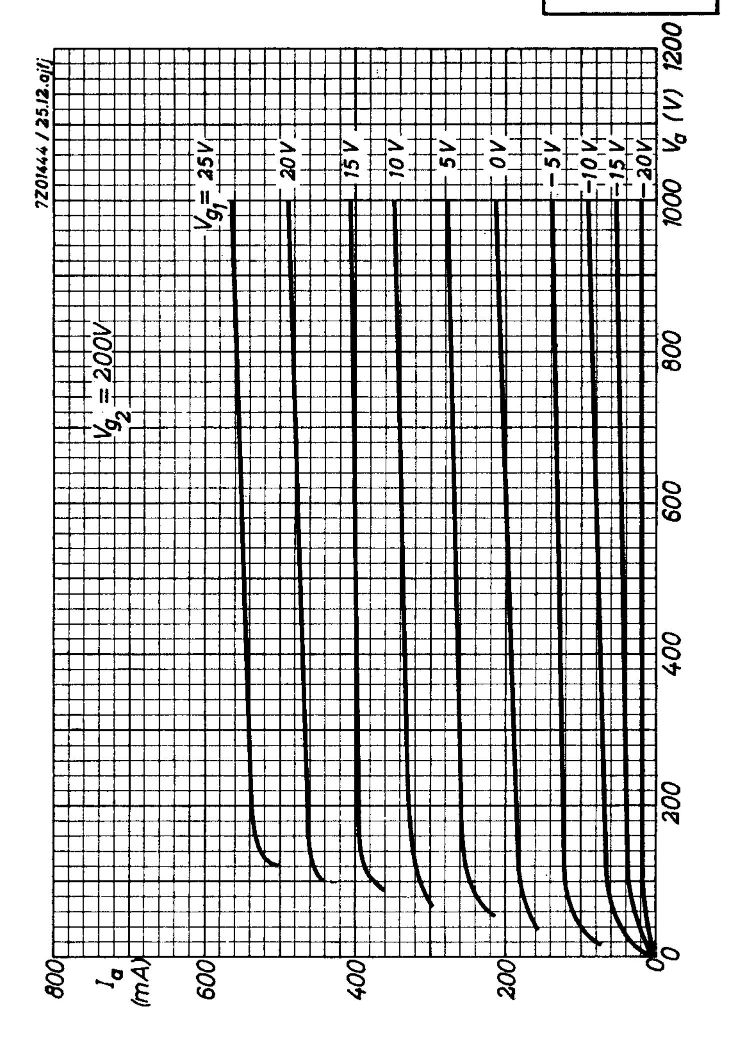
B


7Z01450 / 25.12.aifj
$V_{g_2} = 250V$
V_a (V)
1000
800
600
400
200
0
I_{g_1} (mA)
150
100
50
0
$V_{g_1} = 25V$
20V
15V
10V
5V

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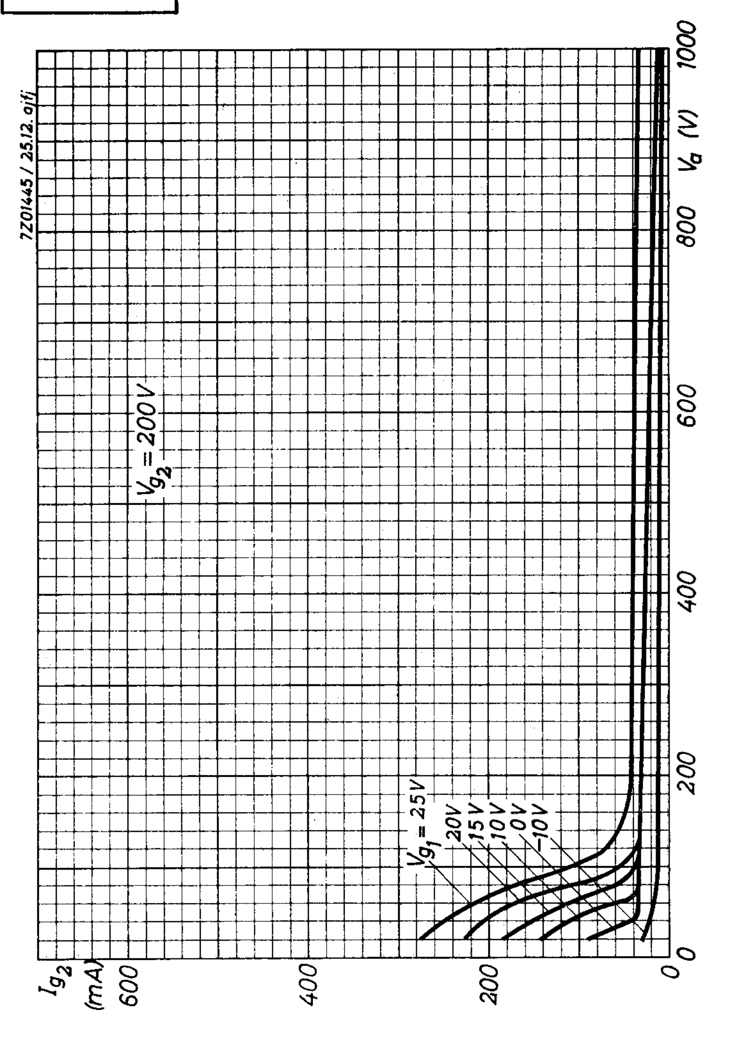


D

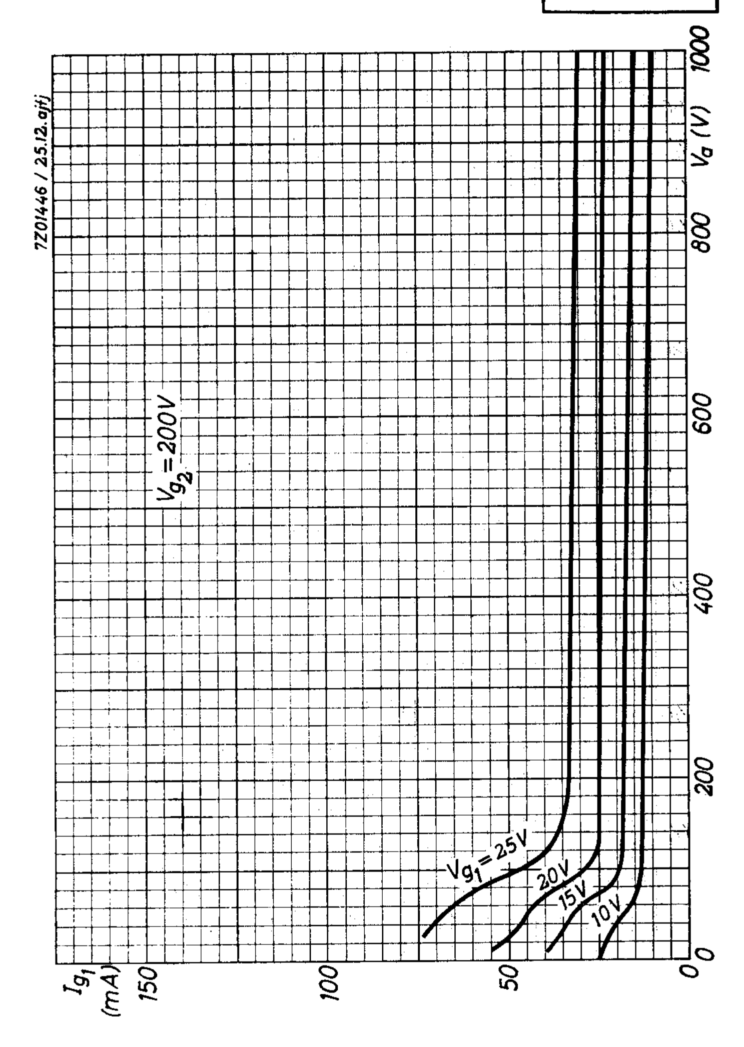

7Z01444 / 25.12.ajlj
V_{g_1} = 25V
20V
15V
10V
5V
0V
−5V
−10V
−15V
−20V
V_{g_2} = 200V
V_a (V)
1200
1000
800
600
400
200
0
I_a (mA)
800
600
400
200
0

YL1060

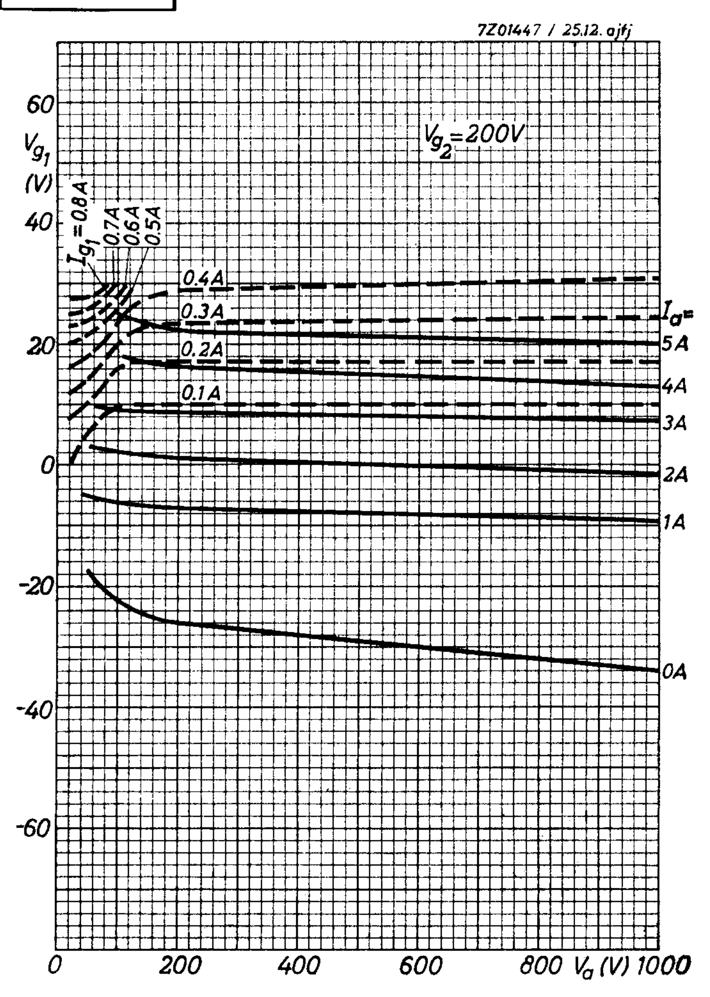
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YL1060 PHILIPS



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YL1060

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7	B	1962.12.12
8	C	1962.12.12
9	D	1962.12.12
10	E	1962.12.12
11	F	1962.12.12
12	G	1962.12.12
13	H	1962.12.12
14	FP	1999.12.24